

# **METHOD, SYSTEM, AND SOFTWARE FOR GEOGRAPHICALLY FOCUSED NETWORK ADVERTISING**

## **CROSS-REFERENCE TO RELATED APPLICATION(S)**

This application claims the benefit of priority under 35 U.S.C. §119(e) of  
5 provisional application serial number 60/165,943, entitled "Geographically Focused  
Networked Advertising System," filed on November 17, 1999, the disclosure which is  
incorporated herein in its entirety.

## **BACKGROUND OF THE INVENTION**

### **Field of the Invention**

9 This invention relates generally to the field of a software based system and  
10 method that provides useful and tailored location based information to a user  
11 interested in a particular subject area, and more particularly, to a software based  
12 system and method that automatically determines location data of a user to generate  
13 and display the location based information to the user.

### **Background of the Related Art**

14 One of the problems of an information site on the Internet or other similar  
15 widely accessible public or private network (or internet-work) is that the information  
16 that is relevant to one user at one location may not be relevant to another user at  
17 another location. For example, information relating to repair personnel is relevant  
18 only to a relatively local area because repair personnel in other areas cannot  
19 conveniently respond to the repair needs of people in other areas that are not within  
20 easy travelling distance.

21 Therefore, the boundary-less nature of a widely accessible network, like the  
22 Internet, creates a problem for providing services that are necessarily or  
23 advantageously only provided on a regional or location based basis. Other  
24 examples of such location specific services includes professional services, such as,  
25 lawyers, doctors, veterinarians, and real estate professionals, who are licensed by  
jurisdiction, and as such, can only provide services within the jurisdictions in which  
they are authorized or licensed. Furthermore, even where a service provider may be

authorized in a relatively large jurisdiction, they may effectively provide services in only a much smaller area of their jurisdiction. For example, real estate professionals often specialize in real estate transactions in a small area or locality even if they are licensed to practice in a larger jurisdiction. Other examples include delivery companies, such as local food or grocery delivery service companies that may be able to provide delivery services of goods only in a specific location or area.

Furthermore, there is a need for the location information to be particularized based on subject areas that may be of interest to a user. Therefore, in a particular location, a user may only be interested in information that relates to one or more subject areas. Since, an information site on a widely accessible network, like the Internet, potentially provides information to any user that can access the Internet, there is a need for a system that provides location based information tailored to the location of a particular user (or a communication device used by the user) and also limited or sorted by the subject areas of interest to the user.

In addition, the providers of information on an information site on a widely accessed network, such as the Internet, need the opportunity to tailor their content and advertisements to users in a particular location and/or related to a particular subject area. Accordingly, there is a need for a system that effectively provides location based advertising and content based on a location of a user that accesses the advertising and content. Furthermore, there is a need for a system that allows a sponsor or an advertiser to better manage their expenditures based on such local usage of their content or advertising provided on a widely accessed network, such as the Internet.

## SUMMARY OF THE INVENTION

Therefore, it is a general object of the invention to alleviate the problems and shortcomings identified above.

In one aspect, the present invention provides a method of displaying location based information from an information site on a network, the method

including: determining location data of a user of the location based information on the network; generating location based information based on the determined location data of the user; and providing the generated location based information to the user over the network.

5 In one aspect of the present invention, the location based information includes location based advertising.

In another aspect of the present invention, the location based information includes location based content.

10 In a further aspect of the present invention, the location based advertising includes advertising related to a particular subject matter area, wherein the particular subject matter area is determined based on the user.

In another aspect, the present invention provides that the location based content includes content related to a particular subject matter area, wherein the particular subject matter area is determined based on the user.

15 In one aspect of the present invention, the step of determining location data includes at least one of: receiving location data input by the user, using a network address of a computing/communication device used by the user, using location data determined by the computing/communication device used by the user, using a location table for determining the location data, or receiving location data from a  
20 geographic tracking system.

In a further aspect of the present invention, the geographic tracking system includes a satellite based tracking system.

25 In one aspect, the present invention provides that the steps of determining location data and providing the generated location based information includes communication with a computing/communication device used by the user.

In a further aspect of the present invention, the computing/communication device includes at least one of: a personal digital assistant (PDA) or other portable device, a web browser, a cell or other wireless phone, a electronic billboard, a website, a pager, a television, a web-based television device, an internet enabled

device or appliance, a health monitoring device, a kiosk displaying information related to one or more subject areas, a terminal in a library, an Internet radio application, and a job related web site.

5 In one aspect, the present invention provides that the subject matter areas includes at least one of: home improvement, real estate, real estate professionals, real estate foreclosures and related services, automobiles, repair facilities, delivery services, health care or veterinary professionals or facilities, and professional service providers.

10 An important aspect of the present invention provides that the network is the Internet.

15 In another aspect, the present invention provides that the location data of a user includes at least one of: country, state, county, administrative division, geographic or location coordinates, postal code, company regions, population regions, or attribute based regions.

20 In one aspect, the present invention provides a computer readable data storage medium having program code recorded thereon for displaying location based information from an information site on a network, the program code including: a first program code that determines location data of a user of the location based information on the network; a second program code that generates location based information based on the determined location data of the user; and a third program code that provides the generated location based information to the user over the network.

25 In another aspect, the present invention provides a system for displaying location based information from an information site on a network, the system including: a host device, connected to the network, that displays location based information to a user; and a server device, connected to the network, that determines location data of the host device, generates location based information based on the location data of the host device, and transmits the generated location based information for display by the host device.

### BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate a presently preferred embodiment of the invention, and, together with the general description given above and the detailed description of the preferred embodiment given below, serve to explain the principles of the invention.

Fig. 1 is a block diagram showing the components of a general purpose computer system connected to an electronic network.

Figure 2 is a block diagram showing the high level system components of the present invention.

Figure 3 is a flow diagram showing the high level process steps of the present invention.

Figure 4 is a diagram showing the stages of one embodiment of the present invention for providing real estate foreclosure related information.

### DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

In a general aspect, the present invention provides a system and method that can be used to provide useful and tailored geographically based information to a user interested in particular subject matter, while generating substantial sponsorship revenues. The information provided to the user can be sponsored or unsponsored, publicly available or proprietary content or any combination thereof.

A user first accesses a computer server (or more generically an "information site") on a public or private network, such as the Internet. Typically, the user will use a computing/communication device to communicate with the computer server. However, the present invention is not limited to any interactive computing/communication device since some embodiments of the present invention can be used by passive components such as electronic billboards or Internet appliances that themselves communicate with the server without any "interaction" with the user.

The server operated by a system operator may provide access to information on several subject areas or only on one. In the case of servers providing information

for several subject matter areas, the user will select the subject area of interest. The user will then be asked to supply geographic information (or more generically "location data") in some useful form. The invention is not limited by the form of providing the geographic information or the location data. For example, the user could "click" on a geographic location in a displayed map, input a town, city, state or postal code, or identify the geographic location in some other manner. Indeed, the geographic information may be derived using an automated process, for example, from the user's network address or other parameters indicative of geographic location. For example, the geographic information may be pre-programmed into a computing/communication device such as an electronic billboard. Alternatively, the geographic information may be derived based on a geographic location tracking system, such as a satellite based tracking system like the GPS.

In another alternative, the user could be prompted for the geographic information first. Next subject topics appropriate to or available for that geographic area as stored in a data base are displayed for the user's selection. For example, a user may input geographic identification for Mesa, Arizona. It is to be understood that the present invention contemplates that one or more of these geographic location indicators can be used in combination.

A computer program module reads the geographic information and identifies and displays subject matter areas corresponding to the geographic information or the location data, such as, for example, home improvement, real estate, or automobiles. When the user clicks on a topic, such as the home improvement topic, he then sees a display of categories. For example, the category list displayed may include such topics as building permits, grading, carpentry, plumbing, electrical, landscaping, painting, interior design, etc. The categories may be sponsored exclusively by a particular supplier of goods and services, as a way of directing the user to that supplier. For example, a provider of permitting services may sponsor the building permits subcategory of this home improvement information site for Mesa, Arizona. The permitting services provider then provides content in the form of original or licensed content. For example, the permitting services provider may display planning and zoning maps licensed from a map maker. The permitting services

provider may also choose to include links to county regulations for the user's review. The permitting services provider could also include original content. For example, text or charts relating to specific requirements and regulations in the geographic region. As the exclusive sponsor for the region, the permitting services provider would also try to direct customers to use his services.

Similarly the electrical category may include separately sponsored sub-categories for electrical contractors, parts suppliers, lamp and lighting supplies, etc. The sponsor of each subcategory provides content and links. For example, the electrical contractor sponsor may provide information about specific local requirements in this region and links to corresponding local regulations. The lamp and lighting sponsor may provide product information and links to manufacturer sites.

Throughout this process an exclusive sponsor for each category or sub-category in the geographic regions corresponding to the region identified for the user provides general information and information unique to that region. For example, geographic regions with miles of ecologically sensitive waterfront may have zoning regulations very different from those in an industrial area or in the plains states. Thus, a system according to the invention includes a server computer that is programmed to capture the user's geographic information and to access a data base of information available for the region identified for the user. For each region, the data base identifies information categories. Each category in that region may have an exclusive sponsor or may be broken down further into sub-categories, with each subcategory having an exclusive sponsor for that region. The exclusive sponsors provide content and links appropriate for that category in that region. The sponsorship may be for any convenient length of time, e.g. a day, week, month, quarter or year. Throughout this process the system operator may display a frame and its own advertising around the information provided by the exclusive sponsor of a particular subject for a particular region.

Geographic regions may be tailored to local circumstances. For example, a heavily populated metropolitan area such as New York may have more geographic regions than a physically larger area in a sparsely populated area of Wyoming. With

a large number of regions and a large number of categories and sub-categories available for sponsorship in each region, there are multiple opportunities for the system operator to generate revenue.

With reference to the figures, Figure 1 is a block diagram showing the components of a general purpose computer system 12 connected to an electronic network 10, such as a computer network. The electronic (or computer) network 10 can also be a public network, such as the Internet or Metropolitan Area Network (MAN), or other private network, such as a corporate Local Area Network (LAN) or Wide Area Network (WAN), or a virtual private network. As shown in the figure 1, the computer system 12 includes a central processing unit (CPU) 14 connected to a system memory 18. The system memory 18 typically contains an operating system 16, a BIOS driver 22, and application programs 20. In addition, the computer system 12 contains input devices 24 such as a mouse and a keyboard 32, and output devices such as a printer 30 and a display monitor 28.

The computer system generally includes a communications interface 26, such as an ethernet card, to communicate to the electronic network 10. Other computer systems 13 and 13A also connect to the electronic network 10. One of skill in the art would recognize that the above system describes the typical components of a computer system connected to an electronic network. It should be appreciated that many other similar configurations are within the abilities of one skilled in the art and all of these configurations could be used with the methods and systems of the present invention. Furthermore, it should be recognized that the computer system and network disclosed herein can be programmed and configured as computing or information sites (such as the server device or the computing/communication device discussed herein), by one skilled in the art, to implement the method and system discussed further herein.

Figure 2 is a block diagram showing the high level system components of a preferred embodiment of the present invention. One or more computing/communication devices (110A, 110B) connect to a server device 120 through an electronic network 100. The computing/communication device 110A typically allows a user to communicate with an information site provided by the



server device 120. For example, the computing/communication device 110A allows the user to interact with the information site provided the server device 120 by allowing user input and transmitting information, for example, location data, to the server device 120. The computing/communication device 110A also receives  
5 information from the server device 120 and presents the information to the user. The information can be provided to the user as visual output (a display device) or other sensory output (audio, multimedia, etc) can also be provided.

Examples of the computing/communication device 110A include a personal digital assistant (PDA) or other portable device, a web browser, a cell or other  
10 wireless phone, a electronic billboard, a website, a pager, a television, a web-based television device, an internet enabled device or appliance, a health monitoring device, a kiosk displaying information related to one or more subject areas, a terminal in a library, an Internet radio application, and a job related web site.

Therefore, in one aspect, the present invention contemplates that the  
15 computing/communication device need not only be an "interactive" device that interacts with a user. It could also be a "passive" device, such as an electronic billboard or an Internet appliance that displays information, and the device is already programmed with its location data that can be communicated to the server device 120. Alternatively, the electronic billboard can communicate with a location tracking  
20 service (such as a satellite based tracking system like the GPS) which generates the location data that is communicated to the server device 120 either directly by the location tracking service or through the electronic billboard.

The electronic network 100 is any communication network that allows one or more computing/communication devices 110A to communicate with a server device  
25 120. The "electronic" network may in fact be an all-optical network or a combination of an optical and electronic network as would be understood by those skilled in the art. The electronic network 100 may be a public network like the Internet, a virtual private network, or a private network like a corporate local area network (LAN) or wide area network (WAN).

The server device 120 is typically a computing system that includes programmed application and system software and hardware and includes logical database 122A that stores "location data" related information and database 122B that stores location based information (advertisement and/or content) that is correlated to the location data stored in the location data database 122A. That is, the location data database 122A enables the server device to meaningfully interpret the location data sent by a user. Once the location data has been interpreted, the location data is used to retrieve the appropriate location based information (advertisement and/or content) from the location based information database 122B. As discussed earlier, in the preferred embodiment, the location data relates to geographical location data and the location based information provides advertisements and/or content that is appropriate for a particular geographical location.

Figure 3 is a flow diagram showing the high level process steps of the present invention. In step 310, the computing/communication device 110A determines location data indicative of a location of a user using the device 110A. The computing/communication device 110A may be programmed to interactively retrieve the location data from a user, for example, by presenting a geographical map or a menu to a user and recording the user's response. Alternatively, the computing/communication device 110A may be preprogrammed with its location data or the location data may be stored on the device as a file. Alternatively, a network address of the device may be used as its location data. In another embodiment, the location data may be derived using a location table that can be changed or modified. In yet another embodiment, the location data may be derived by the computing/communication device 110A communicating with a location tracking service, such as a GPS system. In such an embodiment, the location data may be directly transmitted to the server device 120 from the location tracking service or the location data may be returned to the computing/communication device 110A for transmission to the server device 120.

In step 320, the server device 120 receives the location data indicative of the location of the computing/communication device 110A. In one embodiment, the

server device 120 uses a location data database 122A to interpret the location data received from a computing/communication device 110A. For example, the server device 120 may use a table stored in the database 122A to identify the location of the user based on the received location data.

5           Thereafter, in step 330, the server device 120 generates the location based information using, for example, a location information database 122B. The location information can include advertisement and/or content that is keyed to the location data either directly or through its interpretation using the location data database 122A. The location based information is then transmitted to the  
10           computing/communication device 110A so that the device 110A displays or presents the received location based information in step 340. It should be understood that the location based information can be presented either visually (by a display device) or using multimedia devices that present the information using audio, video, or any other display technologies.

15           One of skill in the art would recognize that other system configurations and data structures could be provided to implement the functionality of the present invention. All such configurations and data structures are considered to be within the scope of the present invention.

20           One of skill in the art would recognize that the server device 120 refers to a logically centralized system that receives and transmits messages from one or more computing/communication devices (110A, 110B). One skilled in the art would recognize that such a logically centralized system could easily be implemented using a physically distributed system in which one or more processors and databases are connected over a computerized network, and suitable hardware and programmed  
25           software is provided to coordinate the processors, databases, and networks to provide the functionalities disclosed herein with respect to the server device 120. Likewise, it should be recognized that the databases 122A and 122B are logically separate. Physically, they could be implemented using one database file that implements separate data structures, such as, separate tables.

In this context, it is also to be understood that the present invention utilizes known security measures for transmission of electronic data across networks. Therefore, encryption, authentication, verification, and other security measures for transmission of electronic data across both public and private networks are provided using techniques that are well known to those skilled in the art.

In one alternate embodiment of the present invention, the C/C device 110A provides contextual information to the server device 120 so that the server device generates and transmits information to the server device that is correlated to the contextual information provided by the C/C device 110A. Examples of such contextual information includes, for example, some characteristic(s) of the user (age, gender, nationality, etc.), profession or vocation information of the user, type of the C/C device 110A (laptop, pager, cellular phone, electronic billboard, terminal connected to a GPS system, etc.), a subject matter of interest to the user, or any information that provides contextual information for the server device 120 to determine appropriate information (content or advertising) for transmission to the server device. One skilled in the art would recognize that additional databases and processing logic would also be needed to interpret the contextual information provided by the C/C devices and to store and/or generate information correlated to contextual information.

In alternate embodiments, the contextual information provided by the C/C device 110A can be used in combination with the location data provided by the C/C device 110A. For example, the C/C device 110A may provide the location data and the contextual information sequentially (with either one being provided first), or the location data and the contextual information can be provided simultaneously by the C/C device 110A.

One exemplary embodiment of the present invention is applied to purchasing foreclosed properties. Real estate foreclosures, and in particular residential real estate foreclosures represented \$28 billion in Real Estate sales in 1998. Real Estate professionals are motivated to make up to twice the normal commissions by selling or financing a foreclosure. Homebuyers reap the benefit of reducing their closing costs substantially and the promise of an instant equity position.

An information site according to the present invention ("HUD Infosite") is an Internet site dedicated to serving both the public who seeks access to the information resources they need to acquire a government foreclosed home and the professionals who specialize in servicing those properties. Using the invention, the  
5 can provide a powerful new paradigm to introduce customers to the local Real Estate professionals that serve them.

The desirability of government foreclosures has created a demand regarding this lucrative niche in the U.S. Real Estate market. The sale of a federally foreclosed home is an intricate transaction that requires knowledge and diligence to complete.

10 Using the present invention, an informed consumer who has been exposed to the information on HUD Infosite will be encouraged to work closely with the local Real Estate professionals advertising on it because the information provided encourages them to do so.

15 From the sponsor's perspective the content is designed to support the Real Estate professional rather than replace their expertise. A Real Estate professional advertising on the HUD Infosite will realize more benefit as a lead generation source, rather than as a source of specific sales of foreclosed Real Estate.

20 A site such as HUD Infosite operating according to the present invention offers business-to-business (B-to-B) potential. Many B-to-B combinations exist. The Real Estate industry depends on building relationships with qualified professionals to handle each aspect of a real estate sale. An approach such as HUD Infosite brings together local professionals to complete their transactions.

25 With reference to Figure 4, a HUD Infosite process according to the present invention is discussed by showing the various interactions of a user with a website embodying the HUD Infosite. In stages 405-415 (National, State, Region), users are guided to the region they are interested in while being presented with national advertisers. Their final region of choice is, preferably stored in a "cookie" for future reference.

30 As shown in stage 420, separating foreclosure source specialties create separate, and distinctly different, primary income streams. Real Estate professionals

are able to feature one or more of these other types of foreclosures, broadening the marketing appeal to these professionals

As shown in stage 425, each region features five professions forming five secondary streams of income (for example): agent, lender, insurance, title, and appraisal. Each of these exclusive Real Estate professionals has paid for the right to promote themselves exclusively within that region. Dividing the exclusive marketing opportunities by specialty and then by profession multiplies the potential income streams to 20 sources of income (four primary and five secondary streams). Multiplying those 20 streams by 2000 geographic regions creates 40,000 potential sources of income per month.

The HUD Infosite can auction off each region periodically, for example every three months. Real Estate professionals currently advertising as exclusive regional professional may have the option to either match the highest bid and maintain their exclusive regional advertiser status, or allow the bidder to assume the exclusive position. The winner will be awarded the ability to have their banner placed within premium space on the regional pages as well as gain the benefits of exclusive rights (i.e. pre-approval forms). Therefore, the HUD Infosite provides one example of a website that receives location data from a user to generate location based information (advertisements and/or content) and is able to maximize the utility for the user while maximizing the opportunities for realized targeted sponsorship revenues.

Other examples of implementations of the present invention include an Internet Service Provider or a cell phone service that provides tailored local advertisements to a user based on location data received from the users. Such services can be made free to a user if the locally tailored advertisements generate a viable revenue model.

Electronic billboards or a GPS enabled device can also tailor their information (content and/or advertisements) based on the location data transmitted to a server device such as that provided by the present invention.

Other applications of the present invention include Internet enabled devices or appliances that can display a local list of repairmen when it detects a problem in the

device or appliance by communicating with a server device provided according to the present invention.

A health monitoring device may display a localized list of doctors or medical facilities based on a detected medical condition by communicating with a server device provided according to the present invention.

A terminal in a library or an information kiosk can provide localized content by transmitting location data and communicating with a server device provided according to the present invention.

Internet applications such as an Internet radio application or a job search website can provide useful localized information based on the location data received from a user.

Other embodiments of the invention will be apparent to those skilled in the art from a consideration of the specification and the practice of the invention disclosed herein. It is intended that the specification be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.